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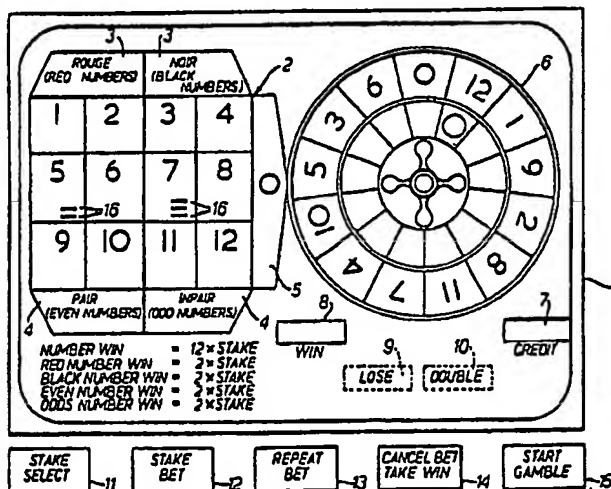
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(54) Title: **IMPROVEMENTS RELATING TO VIDEO GAMES**

(57) Abstract

A video game offers the player a choice of bets before a random selection is made, followed by the award of a prize if a bet is successful. On version is based on roulette, where the table (2) and wheel (6) are displayed on a television screen (1). Projections under the control of a player can leave symbols (16), representing stake money, adjacent selected numbers and other symbols. A projected spot then circulates around the wheel to stop at random against a number, and the machine calculates and awards a prize at appropriate odds if a bet is won. Another version is based on Chuck-a-luck, with projections of dice (23) being thrown to determine the result.



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- 1 -

"Improvements relating to Video Games"

This invention relates to video games.

Many different video games have appeared in recent years, their common factors being a coin or token operated mechanism to release the game for  
5 play, a television screen, often beneath a transparent table top or outer screen, and controls operable by the player to govern or influence the movement of symbols on the screen. Some are just for amusement while others are arranged to award prizes, usually in  
10 monetary form, if certain objects are achieved.

According to the present invention there is provided a video game with a screen providing an array of symbols, a coin, token or credit acceptance system, a first control enabled by the acceptance system to select  
15 and distinguish on the screen at least one symbol or combinations of symbols in the array, a second control to initiate after such selection the movement of an indicator

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- 2 -

image on the screen, which subsequently stops in random fashion, means for comparing said image in its stopped position with the selected symbol or symbols, and means for awarding a prize if the comparison indicates a relationship between them.

Preferably each selection by the first control is indicated by a distinctive illumination in the zone of the selected symbol. Each such selection will usually represent a stake of a set value, and there will generally be provision for repeated selection of any symbol or combination of symbols, thereby to multiply the stake, up to a maximum limit. Conveniently a single stake is represented by a single illuminated spot or area, and a multiple stake by a corresponding number of such spots or areas.

The screen may have a second array of symbols, and the indicator image may traverse this array and stop in registry with one of such symbols. The game may be one of the group known as roulette, boule and vingt-trois, with the first array including a grid of numbers, and the second array simulating a wheel with numbers around the periphery. The indicator image can be a spot representing a ball. The numbers around the "wheel" may be grouped by various colours, and the first array may also provide selectable zones corresponding to said colours. Conventionally, these are red and black. There may also

- 2 -

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- 3 -

be selectable zones in the first array corresponding to odd and even numbers.

Alternatively, the indicator image may represent thrown dice. Here, the game may be in the group  
5 known as Chuck-a-luck, Chuckluck, Crown and Anchor, Hazard and Grand Hazard, and the first array may resemble the board or table for one of such games.

According to another aspect of the present invention there is provided a screen for a video game,  
10 wherein a portion of the screen for registering with a permanent part of the display has projecting and/or indented portions to accentuate such part.

This is particularly applicable to the roulette type game outlined above, where the permanent part is the  
15 simulated wheel. The screen can have a circular dished and/or ribbed formation coincident with it.

For a better understanding of the invention one embodiment will now be described, by way of example, with reference to the accompanying drawings, in which:

20 Figure 1 shows the screen and controls of a video roulette game,

Figure 2 is a cross-section of the screen,

Figure 3 is a face view of a video screen for a Chuck-a-luck game, and

25 Figure 4 is a face view of part of a screen for a Hazard game.



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- 4 -

In Figure 1, the screen 1 has on the lefthand side a projected or permanently marked four by three grid 2 showing the numbers 1 to 12. Two spaces 3 above the grid are marked for selecting red or black numbers and two spaces 4 below for selecting odd or even numbers. The zero is in an elongated space 5 on the righthand side of the grid, adjacent the roulette "wheel" 6. This is a permanent projection or a fixed marking, but it simulates the normal roulette wheel, albeit with less numbers, by having those numbers around the periphery on either red or black backgrounds. In practice, blue may be preferred to black. The screen also has small panels 7, 8, 9 and 10 for indicating a credit, a win, a loss or a double win. The possible wins are printed on the screen, below the grid 2 for example.

The controls are a series of buttons 11 to 15, some of which have dual functions, depending on when they are operated. Once there is credit in the machine (the amount being shown in panel 7) a small square or other distinctive spot will be projected onto the grid 2, for example in the space of number '1'. If the player wants to bet on number '5', repeated pressing of stake select button 11 will move the spot in steps through the lower numbers until the '5' space is reached. If he wants to change his mind and select a lower number instead, the player can press cancel button 14 and the spot will move back to the '1' space. The button 11 is then operated again until the spot reaches the '4' space. Whichever

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- 5 -

space is so selected, a bet can be placed on the corresponding number by pressing the button 12. If there is sufficient credit, the bet can be doubled, trebled and so on up to a limit, preferably five times a single stake, by repeated pressing of the button 12. Each press reduces the credit indicated in panel 7. A placed bet is indicated by an illuminated area, such as a small bar 16, in the space concerned. Multiple stakes are represented by corresponding numbers of bars. These remain, unless cancelled, until the end of the game.

After the numbers, including the zero, the spot can be moved through or stopped in any of the spaces 3 and 4 and bets placed by use of the button 12. The cancel button 14 can obliterate all bets and allow a fresh start. The order of movement and starting point of the spot is not important. In an alternative system the spot automatically moves through the grid in steps with reasonable pauses, and the player presses a button during such a pause when he wants it to stop. In both systems, the position of the spot is memorised within the machine.

After selecting a number, colour, odd or even, or combinations of these, the player can press start button 15. This causes another spot representing a roulette ball, projected onto the screen within the circle of numbers on the wheel 6, to move rapidly around the wheel 6, perhaps accompanied by a clicking noise corresponding to a real roulette wheel spin. Eventually it will stop at random

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- 6 -

in one of the number sectors. If a bet has been placed on that number, a reward of twelve times the original stake is available. A successful red, black, odd or even bet produces just double the stake. A loss is indicated by all losing

5 bets shown by bars 16 being removed from the corresponding grid spaces. If there is a win, the amount is indicated on the panel 8, and the player can take it by pressing button 14, leave it in the machine as credit for further games or try to double it by pressing button 15. The opportunity to

10 gamble for a double win may not always be granted: in some machines it may be available only on a random basis. If the gamble is successful, panel 10 will inform him; if not, the loss will be indicated on panel 9.

A player uses the 'Repeat Bet' button 13 in the

15 next following game if he wants to gamble in the same way on the same numbers and so on. This information is readily stored in the machine's memory and saves the player time when repeating the betting pattern.

The machine may also permit bets on combinations

20 of numbers, in which case the control button 11 would allow simultaneous illumination of adjacent squares, for example a bright area spanning the line between numbers three and four (giving odds of six to one) or a bright area covering the centre of the squares of numbers five, six, nine and ten

25 (giving odds of three to one).

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- 7 -

There are of course other ways of distinguishing the numbers than by moving spots. For example, the entire square or other area could be illuminated, or the numbers themselves could be projected rather than permanently  
5 printed on the screen, and the intensity or colour could be altered to indicate their selection. With projected numbers and a projected circular grid as well perhaps, the wheel could be made to simulate a spin more realistically, and the illuminated spot could be made to bounce around  
10 more like a real roulette ball, and settle into conjunction with one of the numbers as the spin slows and stops.

The example shows numbers up to twelve, whereas the normal roulette game has numbers up to thirty six. It will be understood that different numbers could be  
15 adopted, but it is thought that zero to twelve gives acceptable odds to most players of video games.

In order to add to the similarities with the real game, the screen 1 may be shaped as indicated in Figure 2. Where the wheel 6 is printed or projected, the  
20 screen 1 is vacuum formed into a bowl configuration with a raised rim 17 and a central dome 18, giving an annular trough 19 resembling that into which a real roulette ball is projected.

This technique of vacuum forming the outer

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- 8 -

transparent or translucent screen into a particular shape could be applied to other video games which have a permanent feature as part of the display, and will enhance or provide a three-dimensional effect.

5           Instead of being a one-player game, some of the controls could be duplicated (or even multiplied further) with separate credit and win sensing systems for each player. The identification of selected symbols on the grid could be by different shaped spots, for example  
10 one player having a round spot and another player a cross, or by different colours.

Other games which lend themselves to this video treatment are those in the Chuck-a-luck family, two of which are illustrated in Figures 3 and 4.

15           In Figure 3 there is a permanent array of the numbers 1 to 6 projected or imprinted onto the lower half of a screen 2 in a 2 x 3 grid arrangement 21. By the numbers 1, 3 and 6 there are small bars 22. These represent bets placed in a similar manner to the roulette game by  
20 the player who hopes that the combination of dice will show those numbers.

Projected dice 23 are "thrown" in the upper half of the screen. This is done by pressing a button (not shown) and they appear from the upper righthand corner,  
25 turning and falling as in a normal throw. They hit a level surface, which may be the top of the grid, bounce

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- 9 -

against an imaginary wall on the lefthand side and after rolling finally come to rest in the dotted line positions. The numbers showing on their faces are then compared with the selected numbers on the grid. If there is any  
5 correspondence a prize is paid out accordingly.

Finally, the dice are collected as by a rake, being pulled back to the righthand side, sliding over the imaginary table.

This tumbling dice effect can readily be obtained  
10 using the technique described in our co-pending Application No. 8116957. It may be preferred to have a simpler motion, with the dice just rolling across the grid top.

Figure 4 shows a typical Hazard layout which can also be projected or imprinted onto a video screen.  
15 The bet selection and the throwing of the dice can be carried out in a similar manner to that described above.

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- 10 -

CLAIMS

1. A video game with a screen providing an array of symbols, a coin, token or credit acceptance system, a first control enabled by the acceptance system to select and distinguish on the screen at least one  
5 symbol or combinations of symbols in the array, a second control to initiate after such selection the movement of an indicator image on the screen, which subsequently stops in random fashion, means for comparing said image in its stopped position with the selected symbol or  
10 symbols, and means for awarding a prize if the comparison indicates a relationship between them.

2. A video game as claimed in claim 1, wherein each selection by the first control is indicated by a distinctive illumination in the zone of the selected  
15 symbol..

3. A video game as claimed in claim 2, wherein each selection by the first control represents a stake of a set value.

4. A video game as claimed in claim 3, wherein  
20 the first control enables repeated selection of any symbol or combination of symbols, thereby to multiply the stake.

5. A video game as claimed in claim 4, wherein the stake on any symbol or combination has a maximum limit.

6. A video game as claimed in claim 4 or 5,  
25 wherein a single stake is represented by a single

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- 11 -

illuminated spot or area, and a multiple stake by a corresponding number of such spots or areas.

7. A video game as claimed in any preceding claim, wherein the screen has a second array of symbols,  
5 and the indicator image traverses this array and stops in registry with one of such symbols.

8. A video game as claimed in claim 7, based on the group of games known as roulette, boule and vingt-trois, wherein the first array includes a grid of numbers,  
10 the second array simulates a wheel, with numbers around the periphery, and the indicator image is a spot representing a ball.

9. A video game as claimed in claim 8, wherein the numbers of the second array are grouped by colours  
15 and the first array provides selectable zones corresponding to said colours.

10. A video game as claimed in claim 7 or 8, wherein the first array provides selectable zones corresponding to odd and even numbers.

20 11. A video game as claimed in any one of claims 1 to 6, wherein the indicator image represents thrown dice.

12. A video game as claimed in claim 10, based on the group of games known as Chuck-a-luck, Chuckluck,  
25 Crown and Anchor, Hazard and Grand Hazard, wherein the

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- 12 -

first array resembles the board or table for one of such games.

13. A screen for a video game, wherein a portion of the screen for registering with a permanent part of the display has projecting or indented portions to accentuate said part.

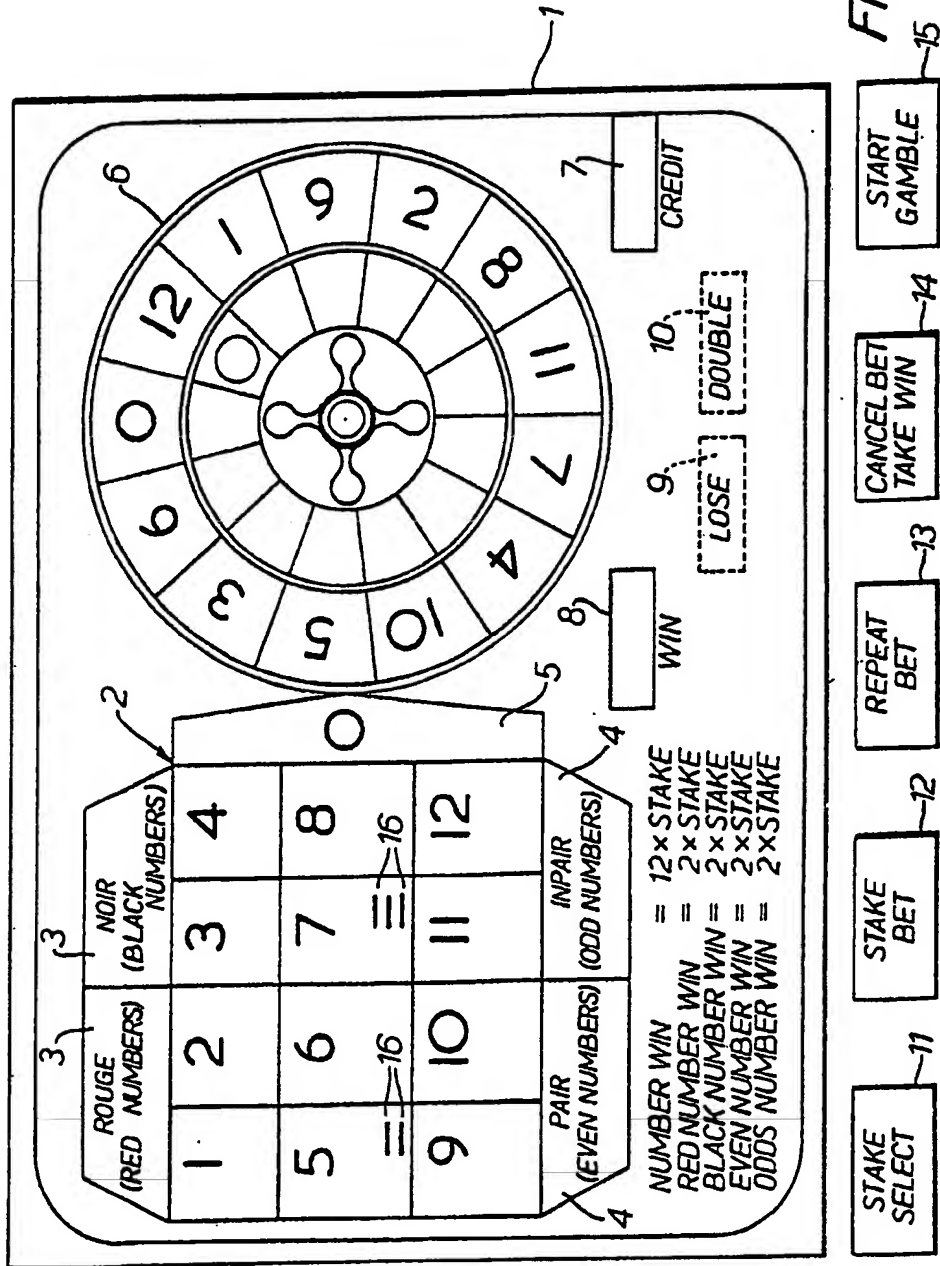
14. A video game as claimed in claim 8, 9 or 10, with a screen as claimed in claim 13, wherein the permanent part is the simulated wheel.

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1/2



2/2



Fig. 2.

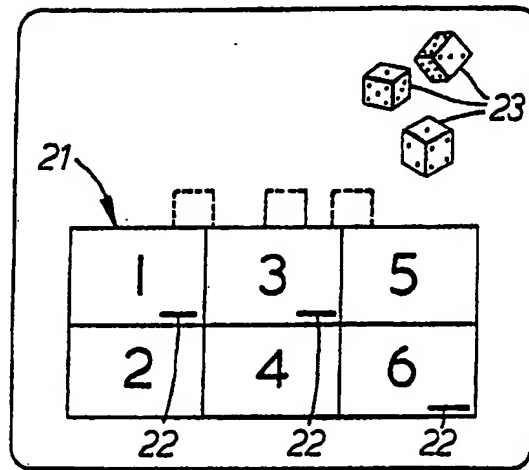


Fig. 3.

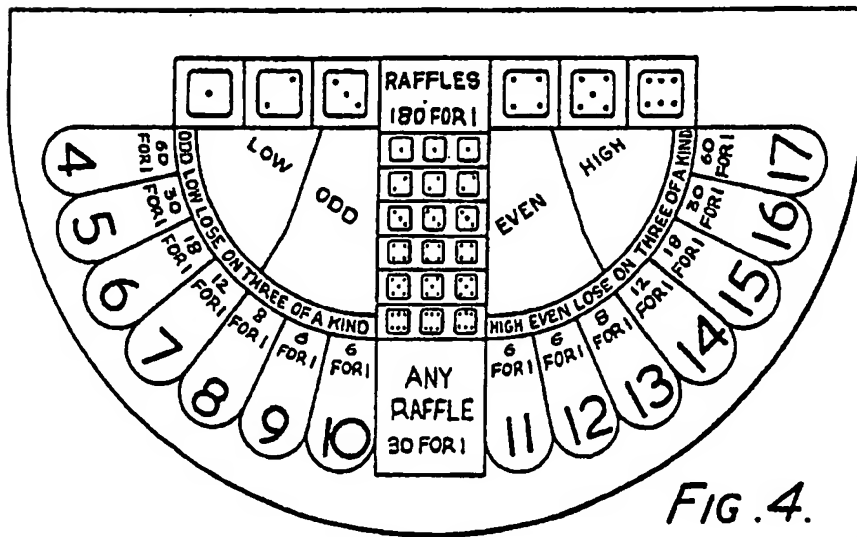


Fig. 4.

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# INTERNATIONAL SEARCH REPORT

International Application No PCT/GB 81/00234

<b>I. CLASSIFICATION OF SUBJECT MATTER</b> (If several classification symbols apply, indicate all) <sup>3</sup>		
According to International Patent Classification (IPC) or to both National Classification and IPC		
IPC <sup>3</sup> : G 07 F 17/32; A 63 F 9/00; A 63 F 5/00		
<b>II. FIELDS SEARCHED</b>		
Minimum Documentation Searched <sup>4</sup>		
Classification System	Classification Symbols	
IPC <sup>3</sup>	A 63 F 9/00; A 63 F 5/00; A 63 F 5/02; G 07 F 17/32; G 07 F 17/34; G 06 F 15/44	
Documentation Searched other than Minimum Documentation to the extent that such Documents are included in the Fields Searched <sup>5</sup>		
<b>III. DOCUMENTS CONSIDERED TO BE RELEVANT</b> <sup>14</sup>		
Category <sup>6</sup>	Citation of Document, <sup>15</sup> with indication, where appropriate, of the relevant passages <sup>17</sup>	Relevant to Claim No. <sup>18</sup>
Y	DE, A, 2912193 (H.K.W. RINGLEBEN) 9 October 1980 see claims; pages 15 and 16; figures ---	1-10, 14 <sup>-</sup>
Y	US, A, 3819186 (A. HINTERSTOCKER) 25 June 1974 see the abstract and figures ---	1-10, 13, 14
Y	EP, A, 0005930 (BARCREST LTD.) 12 December 1979 see the abstract; figures; claims, page 10, lines 3-29 ---	1, 7
A	GB, A, 1553117 (GLENDEARG RESEARCH LTD.) 19 September 1979 see page 1, line 11 - page 2, line 51; figures; claims ---	1-3, 7, 8, 13
A	GB, A, 1414898 (T.W. CASTLE) 19 November 1975 see page 1, lines 21-82; figures 1, 3; claims -----	1, 7
<p><sup>6</sup> Special categories of cited documents: <sup>13</sup></p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"&amp;" document member of the same patent family</p>		
<b>IV. CERTIFICATION</b>		
Date of the Actual Completion of the International Search <sup>1</sup>	Date of Mailing of this International Search Report <sup>2</sup>	
1st February 1982	19th February 1982	
International Searching Authority <sup>1</sup>	Signature of Authorized Officer <sup>20</sup>	
EUROPEAN PATENT OFFICE	G.L.M. [Signature]	